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Estimated Bandwidth Requirements for Telemedicine & Network Applications

Utah Telehealth Network. September 2009

The following applications represent samples of activities typical of healthcare facilities. The file sizes are based upon actual samples; the volumes and transmit times are dependent upon specific organizational needs. Individual healthcare facilities may use all, some, or none of these in addition to other network uses required for their business operations.

Telehealth & Network Applications	**File Size** (with estimated volumes; each organization can adjust to their own situation)	**Desired Outcome** (samples; each org can determine their own)
File and Print Services	Variable	Print pharmacy orders at another location
TeleDiabetic Retinopathy Screening	5 MB/image x 4 images/study x 8 patients/day	Transmit 160 MB in studies in under 2 minutes
TeleEchocardiology	3 MB/image x 3-150 images/study x 6 patients/day	Transmit 450 MB in studies in under 10 minutes * May require videoconferencing
TelePathology	3 MB/image x 3-150 images/study x 6 patients/day	Transmit 450 MB in studies in under 10 minutes * May require videoconferencing
TeleRadiology		
Computerized Radiography(CR)	10 MB/image x 3 images/study	Transmit 30 MB files in under 10 minutes
Computed Tomography(CT)	510 KB/image x 80 images/study (chest CT), x 120 images/study (head CT) x 140 images/study (body CT) x 300 images/study (multi-slice CT)	Transmit 72 MB files in under 10 minutes
MRI	300 KB/image x 350 images/study	Transmit 105 MB files in under 15 minutes
Ultrasound	250 KB/image x 30 images/study	Transmit 7.5 MB files in under 5 minutes
Mammography	39 MB/image x 2 images/study	Transmit 78 MB files in under 10 minutes
TeleConsults using H.323 standard and high definition videoconferencing	384 Kbps – 1.9 Mbps	Diagnosis quality videoconferencing
Remote Desktop Management	500 Kbps/user x 5 users	SSL-VPN with 5 users to same server
Voice-over-IP	17 Kbps x 20 users	Low latency, high quality calls, reliable service.
Web-Streamed Medical Education to 200 participants from UTN core	192 Kbps x 10 users/site	200+ web streams from UTN core
Off-site data, medical, and billing **backups**	1 GB daily backups	Sent in under 60 minutes
Access to remotely-hosted EMRs, PACS, and other HIT systems	Defined by system	Speed defined by system, but reliability of network is imperative.